

IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A method for encapsulating a signaling connection control part (SCCP) message in an Internet protocol (IP) datagram using a transport adapter layer interface (TALI), the method comprising:
- (a) receiving an SS7 message signal unit (MSU), the SS7 MSU including message transfer part (MTP) layers 1, 2, and 3 and an SCCP layer;
 - (b) discarding MTP layer 1 and 2 information from the SS7 MSU;
 - (c) placing the SCCP layer in a service portion of a TALI packet;
 - (d) adding a TALI header to the TALI packet; and
 - (e) adding ~~transmission control protocol (TCP) and IP~~ transport and network layer headers to the TALI packet.
2. (Original) The method of claim 1 comprising placing MTP layer 3 information without modification into the service portion of the TALI packet.
3. (Original) The method of claim 1 comprising extracting MTP layer 3 information from the SS7 MSU and placing the MTP layer 3 information in the SCCP layer.
4. (Original) The method of claim 3 wherein extracting MTP layer 3 information includes extracting an originating point code (OPC) value from the SS7 MSU and placing the MTP layer 3 information in the SCCP layer includes placing the OPC value in a calling party address field in the SCCP layer.
5. (Original) The method of claim 3 wherein extracting MTP layer 3 information includes extracting a destination point code (DPC) value from the SS7 MSU and

placing the MTP layer 3 information in the SCCP layer includes placing the DPC value in a called party address field in the SCCP layer.

6. (Original) The method of claim 1 comprising setting a SYNC field in the TALI packet to a predetermined value indicating the beginning of the TALI packet for stream-oriented communications.
7. (Original) The method of claim 1 comprising setting a LENGTH field in the TALI packet to a value indicative of the LENGTH of the service portion of the TALI packet.
8. (Original) The method of claim 1 comprising setting an OPCODE field in the TALI packet to a predetermined value for identifying the TALI packet as an SCCP packet.
9. (Currently Amended) A method for encapsulating a message transfer part layer 3 (MTP3) packet in an Internet protocol (IP) datagram using a transport adapter layer interface (TALI), the method comprising:
- (a) receiving an MTP3 message signal unit (MSU), the MTP3 MSU including MTP layers 1, 2, and 3;
 - (b) discarding MTP layers 1 and 2 from the MTP3 MSU;
 - (c) placing MTP layer 3 information from the MTP3 MSU in a service portion of a TALI packet;
 - (d) adding a TALI header to the TALI packet; and
 - (e) adding ~~transmission control protocol (TCP) and IP~~ transport and network layer headers to the TALI packet.

10. (Original) The method of claim 9 wherein placing the MTP layer 3 information in the service portion includes placing a routing label and a service indicator octet (SIO) in the service portion of the TALl packet.
11. (Original) The method of claim 10 wherein placing the MTP layer 3 information in the service portion includes placing layer 3 information in addition to the routing label and the SIO in the service portion of the TALl packet.
12. (Original) The method of claim 11 wherein placing information in addition to the routing label and the SIO includes placing network management information in the service portion of the TALl packet.
13. (Original) The method of claim 12 wherein placing network management information in the service portion of the TALl packet includes placing changeover information in the service portion of the TALl packet.
14. (Original) The method of claim 12 wherein placing network management information in the service portion of the TALl packet includes placing changeback information in the service portion of the TALl packet.
15. (Original) The method of claim 12 wherein placing network management information in the service portion of the TALl packet includes placing flow control information in the service portion of the TALl packet.
16. (Original) The method of claim 11 wherein placing information in addition to the routing label and the SIO includes placing network testing information in the service portion of the TALl packet.

17. (Original) The method of claim 16 wherein placing network testing information in the service portion of a TALI packet includes placing signaling-route-set-test information in the service portion of the TALI packet.
18. (Original) The method of claim 9 comprising setting a SYNC field in the TALI packet to a predetermined value indicating the beginning of the TALI packet for stream-oriented communications.
19. (Original) The method of claim 9 comprising setting a LENGTH field in the TALI packet to a value indicative of the LENGTH of the service portion of the TALI packet.
20. (Original) The method of claim 9 comprising setting the OPCODE field to a predetermined value for identifying the TALI packet as an MTP3 packet.
21. (Original) The method of claim 9 comprising adding an application layer sequence number to the TALI packet.
22. (Original) The method of claim 21 comprising adding an application layer sequence number includes adding a service specific connection oriented protocol (SSCOP) trailer to the TALI packet.
- 23-43. (Canceled)
44. (Currently Amended) A computer program product comprising computer-executable instructions embodied in a computer-readable medium for performing steps comprising:
- (a) receiving an SS7 message signal unit (MSU), the SS7 MSU including message transfer part (MTP) layers 1, 2, and 3 and an SCCP layer;
 - (b) discarding MTP layer 1 and 2 information from the SS7 MSU;

- (c) placing the SCCP layer in a service portion of a TALI packet;
 - (d) adding a TALI header to the TALI packet; and
 - (e) adding ~~transmission control protocol (TCP) and IP~~ transport and network layer headers to the TALI packet.
45. (Original) The computer program product of claim 44 comprising placing MTP layer 3 information without modification into the service portion of the TALI packet.
46. (Original) The computer program product of claim 44 comprising extracting MTP layer 3 information from the SS7 MSU and placing the MTP layer 3 information in the SCCP layer.
47. (Original) The computer program product of claim 46 wherein extracting MTP layer 3 information includes extracting an originating point code (OPC) value from the SS7 MSU and placing the MTP layer 3 information in the SCCP layer includes placing the OPC value in a calling party address field in the SCCP layer.
48. (Original) The computer program product of claim 46 wherein extracting MTP layer 3 information includes extracting a destination point code (DPC) value from the SS7 MSU and placing the MTP layer 3 information in the SCCP layer includes placing the DPC value in a called party field address in the SCCP layer.
49. (Original) The computer program product of claim 44 comprising setting a SYNC field in the TALI packet to a predetermined value indicating the beginning of the TALI packet for stream-oriented communications.
50. (Original) The computer program product of claim 44 comprising setting a LENGTH field in the TALI packet to a value indicative of the LENGTH of the service portion of the TALI packet.

51. (Original) The computer program product of claim 44 comprising setting an OPCODE field in the TALI packet to a predetermined value for identifying the TALI packet as an SCCP packet.
52. (Currently Amended) A computer program product for comprising computer-executable instructions embodied in a computer-readable medium for performing steps comprising:
- (a) receiving an MTP3 message signal unit (MSU), the SS7 MSU including MTP layers 1, 2, and 3;
 - (b) discarding MTP layers 1 and 2 from the MTP3 MSU;
 - (c) placing MTP layer 3 information from the MTP3 MSU in a service portion of a TALI packet;
 - (d) adding a TALI header to the TALI packet; and
 - (e) adding ~~transmission control protocol (TCP) and IP~~ transport and network layer headers to the TALI packet.
53. (Original) The computer program product of claim 52 wherein placing the MTP layer 3 information in the service portion includes placing a routing label and a service indicator octet (SIO) in the service portion of the TALI packet.
54. (Original) The computer program product of claim 53 wherein placing the MTP layer 3 information in the service portion includes placing layer 3 information in addition to the routing label and the SIO in the service portion of the TALI packet.
55. (Original) The computer program product of claim 53 wherein placing information in addition to the routing label and the SIO, includes placing network management information in the service portion of the TALI packet.

56. (Original) The computer program product of claim 55 wherein placing network management information in the service portion of the TALI packet includes placing changeover information in the service portion of the TALI packet.
57. (Original) The computer program product of claim 55 wherein placing network management information in the service portion of the TALI packet includes placing changeback information in the service portion of the TALI packet.
58. (Original) The computer program product of claim 55 wherein placing network management information in the service portion of the TALI packet includes placing flow control information in the service portion of the TALI packet.
59. (Original) The computer program product of claim 54 wherein placing information in addition to the routing label and the SIO includes placing network testing information in the service portion of the TALI packet.
60. (Original) The computer program product of claim 59 wherein placing network testing information in the service portion of a TALI packet includes placing signaling-route-set-test information in the service portion of the TALI packet.
61. (Original) The computer program product of claim 52 comprising setting a SYNC field in the TALI packet to a predetermined value indicating the beginning of the TALI packet for stream-oriented communications.
62. (Original) The computer program product of claim 52 comprising setting a LENGTH field in the TALI packet to a value indicative of the LENGTH of the service portion of the TALI packet.

63. (Original) The computer program product of claim 52 comprising setting the OPCODE field to a predetermined value for identifying the TALI packet as an MTP3 packet.
64. (Original) The computer program product of claim 52 comprising adding an application layer sequence number to the TALI packet.
65. (Original) The computer program product of claim 64 comprising adding an application layer sequence number includes adding a service specific connection oriented protocol (SSCOP) trailer to the TALI packet.
- 66-86. (Canceled)
87. (Currently Amended) A communications network element for implementing a transport adapter layer interface (TALI) protocol stack, the communications network element comprising:
- (a) a TALI process for receiving SS7 messages, discarding SS7 layer 1 and 2 information from the SS7 messages, and for adding a TALI header to each of the SS7 messages to form TALI messages; and
 - (b) a ~~transmission control protocol/Internet protocol (TCP/IP)~~ stream oriented communications process for receiving the TALI messages from the TALI process, adding ~~TCP and IP~~ transport and network layer headers to the TALI messages, and forwarding the TALI messages to a receiving application over an IP network based on the TCP and IP headers.
88. (Original) The communications network element of claim 87 comprising a data communications module (DCM) including hardware for sending and receiving

messages over the IP network, wherein the TALI process is implemented on the DCM.

89. (Currently Amended) The communications network element of claim 88 wherein the ~~TCP/IP process~~ stream-oriented communications process is implemented on the DCM.

90. (Currently Amended) The communications network element of claim 87 wherein the ~~TCP/IP process~~ stream oriented communications process is adapted to receive a stream of TCP data from the IP network.

91. (Original) The communications network element of claim 90 wherein the TALI process is adapted to receive the stream of TCP data from the TCP/IP process and to identify individual TALI message boundaries in the stream.

92. (New) The method of claim 1 wherein adding a transport layer header to the TALI packet includes adding a stream-oriented transport layer header to the TALI packet.

93. (New) The method of claim 92 wherein adding a stream-oriented transport layer header to the TALI packet includes adding a transmission control protocol (TCP) header to the TALI packet.

94. (New) The method of claim 9 wherein adding a transport layer header to the TALI packet includes adding a stream-oriented transport layer header to the TALI packet.

95. (New) The method of claim 94 wherein adding a stream-oriented transport layer header to the TALI packet includes adding a transmission control protocol (TCP) header to the TALI packet.

96. (New) The computer program product of claim 44 wherein adding a transport layer header to the TALI packet includes adding a stream-oriented transport layer header to the TALI packet.
97. (New) The computer program product of claim 96 wherein adding a stream-oriented transport layer header to the TALI packet includes adding a transmission control protocol (TCP) header to the TALI packet.
98. (New) The computer program product of claim 52 wherein adding a transport layer header to the TALI packet includes adding a stream-oriented transport layer header to the TALI packet.
99. (New) The computer program product of claim 98 wherein adding a stream-oriented transport layer header to the TALI packet includes adding a transmission control protocol (TCP) header to the TALI packet.
100. (New) The communications network element of claim 87 wherein the stream oriented communications process comprises a TCP/IP process for receiving the TALI messages from the TALI process and adding TCP and IP headers to the TALI messages.
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